with the distinctive characters of the two species, says (Ann. and Mag. Nat. Hist., XIII, 1844, pp. 88, 89) that Stephens had many of each from the Marshamian collection.

Although Walton (*t.c.*, p. 87) writes as though the form of *aeneovirens* with blue or bluish-green elytra (ab. *fragariae* Gyll.) was familiar to him, it seems to be unknown to present-day collectors in this country.* According to Schilsky the *minutus* of Herbst is an entirely blue or violet form of *aeneovirens*. For me, *R. pauxillus* is most easily distinguished by its arcuate temples; in the dorsal aspect the head is constricted immediately behind the eyes and again next the front edge of the thorax, the sides forming a continuous outward curve; Mr. Joy has been good enough to lend me an example taken by S. Stevens off whitethorn at Shirley. I have taken *R. interpunctatus* off oak, in May, at Bixley, near Norwich, and Monkham Wood, Colesborne; it may be distinguished at a glance from *germanicus* by its more oblong form, and wider and flatter interstices. Specimens of *R. aequatus* with the suture blackish (ab. *paykulli* Schilsky) are quite as frequent as the others. I have taken *R. harwoodi* at Foxley Wood, Norfolk, at the same time as *R. tomentosus*; and *R. mannerheimi* off birch at Colesborne on three occasions, but always singly.

Colesborne, Cheltenham:
Nov. 17*th*, 1916.

STUDIES IN *RHYNCHOPHORA*.

BY D. SHARP, M.A., F.R.S.

I.—Tribe PSEUDOBAGOINI,

I wish to express my thanks to Messrs. G. A. K. Marshall, Champion, Bedwell, Day, Tomlin and Britten, as well as to Hugh Scott of the Cambridge Museum, who have assisted me by the communication of specimens of *Pseudobagoini*, as to which tribe a preliminary note was published in this Magazine for December last (p. 275).

PSEUDOBAGOINI, trib. nov. *Erirhinorum*.

Tarsi vel subfiliformes, vel breves articulo tertio bilobato. Tibiae ad apicem intus uncatae.

* I have taken the form of *R. aeneovirens* with blue-green elytra at Darenth Wood and Woking, and in the New Forest.—G. C. C.

Lacordaire established for the genus *Bagous* and some few forms supposed to be allied with it, a group he called *Hydronomides*. This group was distinguished according to him from other *Erirhini* by the unlobed third joint of the tarsi. Nevertheless, a large portion of the species he assigned to the *Hydronomides* have a quite definite lobation of the tarsi, this being the case even in the genus *Hydronomus* itself. The group must therefore be abandoned or modified, and an examination of the aedeagus has yielded such remarkable results as to show that the group is a quite unnatural one, so that its division must be effected. This is best accomplished, I believe, by retaining the separation from the *Erirhini* of both of the component divisions of Lacordaire's group *Hydronomides*, and placing one of the divisions in the *Erirhini*, the other—the true *Bagoini*—going into that great and distinct phylum of the *Curculionidae*, the *Lixidae*.

The name *Hydronomides* must be abandoned, as the genus *Hydronomus* is a very exceptional one, and does not possess the character with which Lacordaire associated the name.

I may here remark that, though there can be no doubt as to the complete severance of the *Bagoini* from the *Pseudobagoini*, the separation of the *Pseudobagoini* as a tribe distinct from *Erirhini* is not beyond question. But the classification of the *Erirhini* is altogether an extremely difficult one, and I think the best course we can adopt at present is to separate the *Pseudobagoini* as a tribe distinguished from other *Erirhini* by what we may term the degradation of the tarsi: but the group in other respects is extremely close to such *Erirhini* as *Dorytomus pectoralis*.

The genera of *Pseudobagoini* may be thus tabulated:—

Tarsi not bilobed.

Mentum narrow ..... *Parabagous*.
Mentum broad ..... *Pseudobagous*.

Tarsi bilobed.

Prosternum impressed..... *Abagous*.
Prosternum emarginate in front, but not impressed.. *Hydronomus*.

Pseudobagous, gen. n.

Mentum latum, transversum. Rostrum crassum, breve, a capite abrupte divisum, scrobis rectis, superne omnino conspicuis. Metasternum elongatum. Tarsi articulo tertio ovali, haud lobato.

Type: *Bagous longulus* Gyll. (South Africa).

Bagous longulus has quite the facies of our European genus *Parabagous*, though it is a more elongate insect. It appears to be very

variable, or there may be more than one species under it. This can only be decided by good series of specimens, as the monotony of the aedeagus appear to be very great throughout the *Pseudobagoini*. The following species seems to be clearly distinct.

1.—*Pseudobagous junodi*, sp. n.

Major, elongatus, angustus, niger, undique griseo-ochraceo-lutosus, tarsis, tibiis antennisque testaceis, his clava nigricante; fronte profunde foveolata, thorace angusto, longitudinaliter medio impresso Long. 7–8 *mm.*

Closely allied to *B. longulus*, but larger, with broader head, stouter rostrum, and very little sign of callosities on the elytra. *B. longulus*, as at present comprehended, is so variable that a more detailed comparison might be deceptive. The aedeagus is very much like that of the genus *Parabagous*, but the strut of the tegumen is excessively short, while in *Parabagous* it is merely short in *P. frit* and long in *P. binodulus*. (In one specimen of *Pseudobagous longulus* this strut can scarcely be detected.)

I am indebted to Mr. G. A. K. Marshall for a pair of this species found at Delagoa Bay by H. Junod. The specimens of *P. longulus* with which I have compared *P. junodi* have been lent to me by Mr. Marshall: three are from Salisbury in Rhodesia, one from Beira, and one from Uitenhage in Cape Colony.

With reference to the short strut of the aedeagus, I may remark that it has been pointed out by Muir and myself that the line of evolution of the aedeagus in *Rhynchophora* is that of reduction of tegmen; and I may now add that when any part of the tegmen is found to be unusually reduced, it may also be found to be slightly variable. Hence minute differences in the strut of the tegmen in *Pseudobagous* should not be considered as of specific value until a very careful investigation has been made. The true specific characters of the *Pseudobagoini* are probably to be found in the sac. Unfortunately this cannot be satisfactorily examined in the case of these small insects when dried.

Parabagous, gen. n.

Mentum angustum. Tarsi filiformes, articulo tertio haud lobato. Prosternum ante coxas profunde impressum.

This genus is well distinguished by the structure of the feet from *Abagous*. Its type is *P. frit*.

1.—*P. frit* Gyll.

P. frit was formerly called *subcarinatus* in our British collections, but Gyllenhal mentions the narrow third joint of the tarsus, which

is a really distinctive character of this insect. It is a rare species in this country, but I have before me a very fine series collected by Mr. Bedwell near Gravesend, and many years ago it used to occur at Hammersmith marshes.

Mr. Bedwell's beautiful series varies but little, but I have in my collection a specimen of unusually small size and dark colour, with slightly less elongate legs and feet, that may be a different species. It was found near London fifty or sixty years ago.

A specimen of *P. frit* was sent by Crotch to M. H. Brisout de Barneville, and was returned by him as *B. subcarinatus*. This example is now in the Cambridge Museum.

2.– *Parabagous binodulus* Herbst.

Curculio binodulus Herbst, Käf. 6, p. 247, pl. 67, fig. 15.

Bagous binodulus Auctt.

This is a very distinct species. The male is remarkable by the great development of the depressions on the under-surface, which extend from near the middle coxae to near the hind margin of the second abdominal segment. The terminal segment is also largely impressed, with the impression coarsely punctured and bearing a good deal of white hair.

I have seen only one example. It is in the Crotch collection of the University of Cambridge. It was sent by Crotch to M. H. Brisout de Barneville at the time he was writing his monograph on *Bagous*, and bears his label "*binodulus*." I have dissected the specimen, and find that the male structures show a close alliance with those of *P. frit*.

Abagous, gen. n.

Mentum parvum. Tarsi breves, articulo tertio lobato. Prosternum ante coxas impressum, profunde emarginatum.

This genus—of which *Bagous lutulentus* is the type—is readily distinguished by the structure of the feet.

The following list represents merely my ideas as to the British species, with which, however, I am but imperfectly acquainted.

1.– *A. lutulentus* Gyll.

This is apparently a fairly common insect in England from Norfolk southwards. It has recently been proposed to replace its well-known name by that of *glabrirostris* Herbst, but I do not think that

the guess as to its being Herbst's species is a happy one, and consequently we should retain the old name.

2.—*A. collignensis* Herbst.

This is known to us as *Bagous lutulentus* var. *major*. I believe it will prove to be a distinct species, and that it is probably the *Curculio collignensis* Herbst, which name stands in catalogues as merely a synonym of *lutulentus*. It is apparently rare, but was formerly found by Dr. Power and myself at Merton, near London, and has recently been taken by Mr. Bedwell near Gravesend.

My three examples prove on dissection to be all females, as also is one of the four found by Bedwell, and his other three specimens look quite the same.

3.—*A.* (sp. ?)

I have a very small narrow specimen, with roughly sculptured rostrum, and the scrobes more than usually visible from above; it is a male, and the aedeagus differs from that of *lutulentus* by its larger development and the more elongate and pointed apical part of the median lobe. It is no doubt a distinct species, but the example is in bad condition and I prefer to leave it without a name at present. It was given me many years ago as an exponent of *Bagous frit*. A female example from Christchurch may possibly be the same species.

4.—*A. lutosus* Gyll.

No British example of this species has been seen by me, but a specimen received from the late C. J. Thomson has been lent to me by Mr. Champion.* It is a female and can only be compared with *A. collignensis*. The thorax is rather broader, and the legs are a little shorter, while the difference in facies is sufficient to make me feel sure that the two are distinct species.

5.—*A. nigritarsis* Thoms.

This is certainly very close to *A. lutulentus*, but the dark colour, which is specially conspicuous in the case of the antennae and tarsi, affords an easy means of distinction. In addition to this the rostrum is rather differently formed, the scrobes being more conspicuous. The aedeagus seems to be very little different in the two.

I have never met with *A. nigritarsis* myself, but I have seen a fine series found by Messrs. Day and Britten in Cumberland, and a smaller

* Mr. Edwards (Ent. Mo. Mag., 1902, p. 241) has recorded the capture of a *Bagous* at Wretham Heath, Norfolk, agreeing with Thomson's *B. lutosus*. Mr. Thouless has also met with it in the same district.—G. C. C.

one found in Ireland by Mr. Tomlin. Two females sent by the late C. J. Thomson to Mr. Champion are probably this species, but they are in bad condition, having been transfixed by a large pin. The only doubt I have as to the distinctness of *nigritarsis* arises from the specimen I have alluded to above under No. 3; but, as I have said, I have little doubt that will prove to be really of another species.

The insect on which *nigritarsis* was first introduced as a British species is still in the Crotch collection at Cambridge. I anticipate that it will prove to be yet another species. It went to M. H. Brisout de Barneville, and bears still his label "lutulentus varietas." I describe it briefly below.

6.—*A. rudis*, sp. n.

Major, robustus, fusco-griseo squamosus, elytris punctis duobus albidis; antennis pedibusque nigris, illarum basi tibiisque testaceis; prothorace angusto, fortiter rugoso-sculpturato. Long. (absque rostro) $3\frac{3}{4}$ *mm.*

A. nigritarsis has a corresponding length of about 3 mm., so that the difference in size is considerable. The colour is less dark, and the sculpture of the thorax is remarkably coarse.

The thorax has a fine channel on the middle, and this is continuous with a depression on the vertex. The constriction of the sides of the thorax near the front is very strong. The elytra are broad, shaped more like those of *B. collignensis* than those of *nigritarsis*, and the callosity before the apex is not very conspicuous; the striation is fine.

The resemblance to *A. collignensis* is so great that the two were placed together in the Crotch collection as *B.* "*nigritarsis*," but independently of the darker antennae and tarsi, *A. rudis* has a broader and more strongly lobed third tarsal segment.

The sex of the individual is uncertain, and there is no indication of its source.

Hydronomus Auctt.

It would scarcely be necessary to allude to this genus were it not that it has recently been merged in *Bagous*. This is a complete mistake. *Hydronomus* has not been connected with *Bagous* proper since the far distant epoch when the differentiation of the *Lixidae* from the other *Curculionidae* was established. It differs also from the other genera of *Pseudobagoini*, not only by the unimpressed prosternum, but also by the scrobes, which are less definite and directed more downwards. The aedeagus is quite that of the other *Pseudobagoini*.

I hope to deal with the true *Bagoini* in a subsequent paper. May I add that I shall be very much obliged to anyone who will let me see

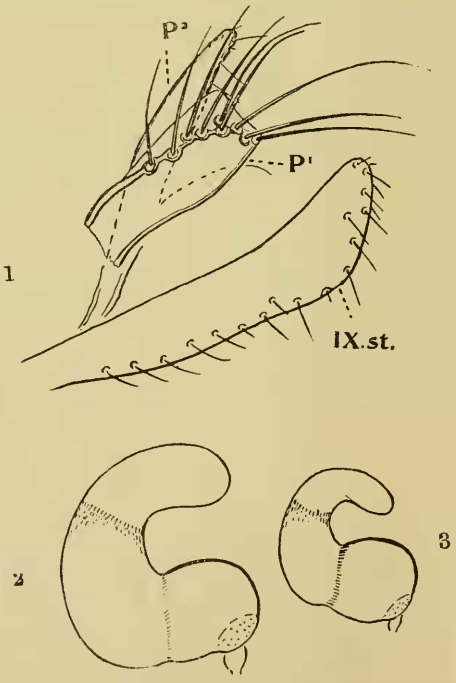
an example of *B. diglyptus*? There is a species that must be somewhere near it in Mr. Tomlin's collection, and I am a little doubtful whether "*diglyptus*" should really have a place in our Catalogue.

Brockenhurst:
December 28th, 1916.

ON *XENOPSYLLA AEQUISETOSUS* ENDERL. (1901).

BY THE HON. N. C. ROTHSCHILD, M.A., F.L.S.

This species of *Siphonaptera* was described in 1901 by Enderlein (I, p. 554) from a single female contained in the collection of the Königl. Zoologische Museum in Berlin. When, in 1908, we published our revision of the non-combed eyed *Siphonaptera* (II, p. 45) the species was still unknown to us, except for Enderlein's description and



some additional notes received from the director of the Institute just mentioned. In 1911, however, all the fleas of the Berlin Museum were entrusted to us for study, inclusive of the types; and in the catalogue we gave of them (III, pp. 64 and 89) the differences between the females